

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date:

Region: Wilmington Regional Office
County: New Hanover
NC Facility ID: 6500036
Inspector's Name: Ashby Armistead
Date of Last Inspection: 09/13/2006
Compliance Code: C/In Compliance With
 Procedural Reqr

Facility Data			Permit Applicability (this application only)		
<p>Applicant (Facility's Name): Carolina Power and Light Company d/b/a Progress Energy Caro</p> <p>Facility Address: Carolina Power and Light Company d/b/a Progress Energy Caro 801 Sutton Steam Plant Road Wilmington, NC 28401</p> <p>SIC: 4911 / Electric Services NAICS: 221112 / Fossil Fuel Electric Power Generation</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>			<p>SIP: 2D .0614 (CAM) NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other:</p>		
Contact Data			Application Data		
Facility Contact	Authorized Contact	Technical Contact	<p>Application Number: 6500036.05B Date Received: 02/16/2005 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 01318/T20 Existing Permit Issue Date: 06/01/2005 Existing Permit Expiration Date: 11/30/2005</p>		
Kent Tyndall Environmental Analyst (910) 343-3244 801 Sutton Steam Plant Road Wilmington NC, 28401	Harry Sideris Plant Manager 801 Sutton Steam Plant Road Wilmington NC, 28401	Stephen Boone Lead Environmental Specialist (919) 546-4798 410 S. Wilmington Street Raleigh NC, 27602			
<p>Review Engineer: Ed Martin</p> <p>Review Engineer's Signature: _____ Date: _____</p> <p>DRAFT FOR PUBLIC NOTICE</p>		<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue 01318/T22 Permit Issue Date: Permit Expiration Date:</p>			

I. Purpose of Application:

This permit revision is to renew the existing Title V permit pursuant to 2Q .0513. The renewal application was received on February 16, 2005, or at least nine months prior to the expiration date. Therefore, the existing permit, which has an expiration date of November 30, 2005, did not expire on that date and all terms and conditions of the existing permit remain in effect until the renewed permit has been issued.

Since recent revision to the State 2D .1404(g) rule eliminating the interim NOx reporting, which required the tons of nitrogen oxides emitted during the previous May and June to be reported no later than July 30 of each year, has not yet been approved by EPA into the SIP, it is necessary to retain this requirement in the permit. Therefore, the 2D .1416 NOx condition in Section 2.1 A.10 has been revised to make it a Federal-only requirement under 40 CFR 52 Subpart II and a separate 2D .1416 State-only requirement has been added at condition 2.1 A.11 for the boilers; and the 2D .1416 and .1417 NOx condition in and Section 2.1 B.3 has been revised to make 2D .1416 and .1417 a Federal-only requirement under 40 CFR 52 Subpart II and a separate 2D .1416 and .1417 State-only requirement has been added at condition 2.1 B.4 for the combustion turbines.

Also, Table 2 in Part II, Section 1 of the permit was removed since the Mobotec Rotating Over Fire Air System and a Rotamix ammonia/urea injection system startup notifications of the 502(b)(10) change were made to WiRO and to the EPA on 2-22-05 and since this equipment went through the Title V public notice and EPA approval process with permit 01318T20 issued 6-1-05, but the table was never removed. In addition, the Unit 2 low-NOx burner system was removed from Table 1 since this equipment has been installed.

Other miscellaneous changes are shown in Section II below.

II. Permit Changes:

The following changes were made to the Progress Energy Sutton Electric Plant Air Permit No. 01318T22:

Page(s)	Part, Section	Change
Insignificant Activities List		
-	-	Added to list: I-72 one 19 kW propane fired emergency backup generator engine and associated propane storage tank I-73 Alternate barge coal hopper, 450 tons per hour
Part I		
Cover	-	Amended permit numbers and dates.
-	entire permit	Changed several ID Nos. to match Emission Source Module.
3-4	Part I, Section 1, table of emission sources and control devices	Removed asterisk for Unit 2 low-NOx burner system since this equipment has been installed. Removed the following from footnote ** since the Unit 3 Mobotec Rotating Over Fire Air System and a Rotamix ammonia/urea injection system equipment has been installed: <i>These emission sources or control devices are listed under Part II.</i>
5-6	Part I, Section 2.1 A regulation table	Revised to show separate regulations for 40 CFR 52 Subpart II (Federal-only requirement) and 2D .1416 (State-only requirement) under nitrogen oxides. Revised to show all applicable toxic air pollutant regulations to include recycled oil, supplemental fuels and toxics demonstration. Added 2D .0614 CAM.
10-11	Part I, Section 2.1 A.8	Revised recycled fuel oil condition.
12-13	Part I, Section 2.1 A.10 and 11	Revised to make 2D .1416 a Federal-only requirement under 40 CFR 52 Subpart II and added a separate 2D .1416 State-only requirement.
15	Part I, Section 2.1 A.13 (new condition number)	Moved toxic limits for combustion turbines from this section to Section 2.1 B.5.
15-16	Part I, Section 2.1 A.14	Added 2D .0614 CAM requirements.
16	Part I, Section 2.1 B regulation table	Revised to show separate regulations for 40 CFR 52 Subpart II (Federal-only requirement) and 2D .1416 and .1417 (State-only requirement) under nitrogen oxides.

		Added 15A NCAC 2D .1100 for toxic demonstration moved from Section 2.1 A.13 (new condition number) to Section 2.1 B.5.
17-18	Part I, Section 2.1 B.3 and 4	Revised to make 2D .1416 and .1417 a Federal-only requirement under 40 CFR 52 Subpart II and added a separate 2D .1416 and .1417 State-only requirement. Revised language to match standard permit conditions.
18-19	Part I, Section 2.1 B.5	Moved toxic limits from Section 2.1 A.13 (new condition number) to this section.
27-34	Part I, Section 3	Added new updated set of General Conditions
Part II		
35	Part II, Section 1	Removed Unit 2 low-NOx burner system from Table 1 since this equipment has been installed.
35	Part II, Section 1	Removed Table 2 in Section 1 since the Unit 3 Mobotec Rotating Over Fire Air System and a Rotamix ammonia/urea injection system startup notifications of the change were made 2-22-05 and since this equipment has been through public notice and EPA approval.

III. Changes to Permit Since Initial Title V Was Issued

Permit No.	Type of Modification	Reason for Permit	Issue Date
01318T14	initial Title V permit	initial Title V permit	12-1-00
01318T15	502(b)(10) modification	add new coal unloading and conveying system	5-24-02
01318T16	2Q .0514 administrative amendment	various minor changes	8-13-02
01318T17	2Q .0514 administrative amendment	add federal opacity, remove old SOC, add NOx SIP requirements	2-20-04 (petitioned 3-18-04)
01318T18	502(b)(10) modification	add ROFA	2-21-05
01318T19	2Q .0501(d)(1) reopen for cause	Acid Rain renewal	4-29-05 (petitioned 5-27-05)
01318T20	2Q .0501(d)(1) reopen for cause	revise notification general condition I.A	6-1-05 (petitioned 6-28-05)
01318T21	significant (2Q .0501(c)(2)) permit modification	add burning biomass, revise for approved 2D .0521 opacity rule	3-8-06
01318T22	renewal	renewal	TBD

IV. Facility Description

Progress Energy's L. V. Sutton Steam Electric Plant is an electric utility facility that generates electrical power using boilers and internal combustion turbines. The L. V. Sutton facility has three coal/No. 2 fuel oil/on-specification used No. 2 fuel oil-fired electric utility boilers (ID Nos. Unit 1 Boiler, Unit 2 Boiler, and Unit 3 Boiler), and three No. 2 fuel oil/natural gas-fired simple-cycle internal combustion turbines (ID Nos. IC1, IC2A, and IC2B).

V. Statement of Compliance

The facility was last inspected on May 20, 2005 by Ashby Armistead of the Wilmington Regional Office. Based on his report, the facility appeared to be operating in compliance with their air permit at the time of the inspection.

VI. Summary of Changes to Emission Sources and Control Devices

There are no changes to emission sources or control devices (except to the insignificant activities list as shown in Section II above).

VII. Emission and Regulatory Evaluation

The following new regulations were added:

1. 2D .0614: COMPLIANCE ASSURANCE MONITORING (40 CFR 64)

Compliance Assurance Monitoring (CAM) Analysis

This facility is subject to a CAM analysis as required for renewal of a Title V permit. CAM applies to the Unit 1, 2 and 3 boilers since these sources have an electrostatic precipitator (ESP) for control of PM-10 emissions and have potential pre-control device emissions of the applicable regulated air pollutant of more than 100 tons per year each (ie: the amount to be classified as a major source). As stated in §64.3(d)(1) of 40 CFR 64, if a continuous opacity monitoring system (COMS) is required pursuant to other authority under the Act or state or local law, the owner or operator shall use such system to satisfy the requirements of Part 64. As submitted with the application, Progress has proposed an opacity excursion level of 21% for Unit 1, 24% for Unit 2 and 35% for Unit 3 based on a plot of opacity vs. PM emissions using data points from annual 1-hour stack tests performed to show compliance with the 2D .0536 requirements since 1980. The data was fit with a logarithmic curve, which Progress states best correlates with the data. Progress is proposing these opacity excursion points based on taking the opacity value at the intersection of the curve with the PM limits of 0.11 lb/mmBtu for each unit, then adding 5% "...to account for monitor variability..." However, at these opacity values, the PM limits will have already been exceeded. Therefore, in order to provide a reasonable assurance of compliance with the emission limitation, a lower opacity excursion point is needed to trigger action before the PM limit is reached. EPA's proposed CAM Technical Guidance: *CAM Protocol for an ESP Controlling PM from a Coal-Fired Boiler* recommends that the indicator range for opacity be established at a level equal to or less than an opacity at which the source has demonstrated a margin of compliance with the PM emissions limit of at least 10%. Using the logarithmic equations developed by Progress of:

$$\text{Unit 1: } y = 5.8579\text{Ln}(x) + 28.448$$

$$\text{Unit 2: } y = 10.488\text{Ln}(x) + 42.197$$

$$\text{Unit 3: } y = 18.265\text{Ln}(x) + 70.74$$

results in opacity levels of 14% for Unit 1, 17% for Unit 2, and 28% for Unit 3 in order to be at least 10% below the PM limit. Three-hour block average opacity values are to be used to eliminate any short-term excursions during startup or shutdown.

Monitoring/Recordkeeping

To provide a reasonable assurance of compliance with the particulate matter limit of:

Unit 1 Boiler	0.11 lb/mmBtu
Unit 2 Boiler	0.11 lb/mmBtu
Unit 3 Boiler	0.11 lb/mmBtu

for the ESP control devices on these sources, the Permittee shall determine and record opacity using a continuous opacity monitoring system (COMS) meeting the requirements of Appendix B of 40 CFR Part 60. Any three-hour block average opacity value in excess of the following indicator ranges shall be deemed an excursion as defined in 40 CFR Part 64:

Unit 1 Boiler - 14 percent
Unit 2 Boiler - 17 percent
Unit 3 Boiler - 28 percent

The appropriate averaging period for which an excursion shall be determined is each 3-hour block average of six-minute opacity averages beginning at midnight (total of eight 3-hour block periods each day). Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for data averages and calculations.

For any excursion, the Permittee shall initiate an inspection of the control equipment and/or the COMS and initiate the necessary repairs. In addition to implementing procedures outlined in the malfunction abatement plan, as required in Section 2.1 A.5, the following corrective actions shall be taken as soon as practical:

- i. Control operator shall notify the shift supervisor or responsible official (plant manager or representative) in accordance with plant procedures.
- ii. System dispatcher shall be alerted if load reductions are anticipated.
- iii. The following operating practices and procedures shall be initiated as necessary:
 - Identify cause of excursion
 - Isolate ESP field or increase power input to other fields if necessary
 - Reduce load, as necessary, to help minimize emissions
 - Proceed to shutdown or confirm malfunction conditions exist if emissions cannot be controlled appropriately
 - Initiate work order for ESP inspection and repair as needed
- iv. Nature and cause of excursion shall be documented in operations log.
- v. Provide notification to DAQ as necessary.

If 5.0 percent or greater of the three-hour block averaged COMS data (excluding startup, shutdown, and malfunction periods) recorded in a calendar quarter exceeds the opacity value, the Permittee shall perform a stack test in the following calendar quarter to demonstrate compliance with the particulate standards above. In the event that a unit exceeds 80 percent of its particulate emission limit during the stack test, the Permittee shall schedule and conduct another stack test within 6 months. Upon demonstration that the source is operating under 80 percent of its particulate limit, as shown by three consecutive semiannual stack tests, the source may resume annual stack tests. For the purposes of this condition, it is not necessary to submit a testing protocol prior to the scheduled test date, as specified in General Condition JJ, if no changes are being made to the most recently approved previous protocol used for the annual particulate test in Section 2.1 4.c. If the most recently approved previous protocol is to be used for testing, it shall be submitted with the test report. If a source operates less than 2200 hours during any quarter, the source may evaluate three-hour opacity values using operating data for the current quarter and the preceding quarters until 2200 hours of data are obtained. If opacity is not determined and recorded, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0614. If the result of any stack test is greater than the particulate standard above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0536.

Reporting

The results of any stack test shall be reported within 30 days, and the test report shall be submitted within 60 days after the test. In addition, the Permittee shall submit the following reports as required under §64.9 of 40 CFR Part 64 semiannually:

- i. Summary information on the number, duration, and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken; and
- ii. Summary information on the number, duration, and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable).

VIII. Public Notice and EPA Review of the Draft Permit

Pursuant to 15A NCAC 2Q .0521, a notice of the draft Title V Operating Permit will be published in a newspaper of general circulation where the facility is located to provide for a 30 day comment period, with

an opportunity for a public hearing. Copies of the public notice will be sent to persons on the Title V mailing list, EPA, Fayetteville Regional Office, the facility, and affected states for review.

A. Comments Received from Public Notice

later

B. Changes to Permit After Public Notice

later

IX. Recommendations

later